Spanish inferential and mirative futures and conditionals: An evidential gradable modal proposal

María Luisa Rivero [*]

University of Ottawa, Department of Linguistics, 70 Laurier Ave. East, Room 417, Ottawa, Ontario K1N 6N5, Canada

Abstract

Spanish future and conditional morphemes may display inferential readings: Elena ganaría la carrera ayer, as in 'Helen must have won the race yesterday', a present deduction about a past event. They may also display readings known as concessive, dubbed 'mirative' here: Elena ganaría la carrera ayer, pero no está contenta 'Helen might have won the race yesterday, but she is not satisfied'. The proposal is that such futures and conditional affixes encode an evidential modal involving a body of indirect information, which the speaker may vouch for or not. This modal contributes to propositional content and can be syntactically and semantically embedded, so is not an illocutionary marker. It is a degree expression that does not reduce to necessity or possibility, so is reminiscent of gradable adjectives such as tall or probable. It displays the flexible anchoring characteristics of predicates of personal taste such as tasty, so may partially differ from canonical epistemic modals. Ordering sources and anchoring behavior combine in such a modal to trigger various levels of confidence in the information, resulting in variability in force, which may range from certainty/necessity to doubt/possibility in both inferentials and miratives.
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1. Introduction

In Spanish,[1] future and conditional affixes can function as items that access indirect evidence at Speech Time. Beginning with futures in **bold** from now on, consider (1b) within context (1), with its meaning reflected by a free translation into English.

(1) Context: Helen walks into the living room where her mother and father are watching TV. Upon observing Helen's general demeanor, father utters (1a), mother replies with (1b), and walks out of the room in search of a thermometer.

    a.   La   niña   tiene   muy mala cara hoy.
        The little.girl have.Present very bad   face today
        'Our little girl does not look good today.'

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> b.   **Tendrá**   fiebre. Voy   a   por el   termómetro.
>   Have.Fut fever. I.go.Pres to for the thermometer
>   'She may/might/must have a temperature. I'll get the thermometer'.

In (1b), future morphology results in a reading labeled here '**inferential**', which signals deduction based on indirect evidence, and speaks of a present event with a flavor of uncertainty. The future morphology in this instance, then, could be dubbed 'fake', as it does not forward-shift time, a prospective function often considered its primary characteristic.[2]

In his 1847–1860 grammar, Andrés Bello already noted readings like (1b), calling them metaphorical. Many grammarians with labels that include 'epistemic', conjectural, other than 'inferential', have subsequently mentioned them.[3] They reside in an ambiguous inflectional morphology.[4] They have attracted attention from a sociolinguistic perspective[5] as a feature that may distinguish between Peninsular and American Spanish. The view is that, in partial contrast with the peninsular variety, American Spanish tends to reserve the morphologically simple future for readings of type (1b), and predominantly applies the prospective reading to periphrastic formations: Va a cantar '(He/She) is going to sing'.

Constructions with the (**bolded**) conditional suffix in (2b) have attracted less attention, but, when in parallel contexts, they display similar properties to those with futures.

> (2)   a.   La niña   tenía   muy mala cara ayer.
>   The little.girl had.Impf very bad face today
>   'Our little girl did not look good yesterday.'
>
>   b.   **Tendría**   fiebre. No se me ocurrió   ponerle el   termómetro.
>   Have.Cond fever. Neg Refl me occurred put.her the thermometer.
>   'She may/might/could have had a temperature. It did not occur to me to check it.'

Conditional (2b) contributes a reading that signals indirect information coupled to present uncertainty often related to possibility.[6] However, a well known difference between future (1b) and conditional (2b) is that the first places the state attributed to the child in the present, coinciding with Speech Time, while the second places it in the past. That is, the temporal orientation of the modal claim with a future or conditional is Speech Time, and the orientation applied to the prejacent proposition that depicts the eventuality is present with the future, and past with the conditional. The term 'prejacent' (re)introduced by von Fintel (2006) stands for a bare proposition void of aspect and tense embedded in the modal claim, or the complement structure of the modal, roughly corresponding to a syntactic VP.

Examples (1b–2b), and parallel sentences with progressive or perfect morphology are not felicitous if the information is direct in the sense that the event encoded in the prejacent proposition is observed or directly seen. The indirect evidence can be auditory, as when I hear drops falling on a roof and infer that it is raining in (3a). It can be olfactory, as when I smell smoke, and infer that something is burning in the kitchen, as in (3b), or visual as illustrated later in (23), and so on. Logic or generally accepted truths can also be sources of indirect evidence. However, sentences such as (3a–b) are not felicitous if the eventuality itself is witnessed. More precisely, (3a) is not felicitous if the speaker sees a raining event as it is occurring.

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[2] The paper omits discussion of prospective futures, the much-debated topic of their temporal vs. modal status, and their relations with inferentials. For discussion of these topics, see Giannakidou and Mari (in press) on Greek and Italian, and Mihoc (2012) on Rumanian.

[3] See Matte Bon (2006) for a survey of descriptive grammars of Spanish.

[4] Inferentials, then, could be placed amongst 'evidential strategies' (Aikhenvald, 2004). Notwithstanding labels, an understanding of the properties of such morphemes requires analytical tools similar to those for evidential modal systems with dedicated morphologies. See also Squartini (2008), who is amongst those who suggest that evidential strategies and systems may be based on similar analytical notions.

[5] See Aaron (2006) for diachronic quantitative developments of epistemic simple futures in peninsular Spanish from the Middle Ages onward, and references on quantitative studies in varieties of American Spanish.

[6] Simple conditionals bear interest for theoretical reasons not discussed for lack of space. In particular, they may invoke present knowledge of a past situation – the reading Condoravdi (2002) calls 'epistemic'. As English glosses indicate, such a reading is possible only with a modal combined with perfect *have*. Condoravdi assigns a crucial role to this auxiliary in the past reading in English, adopting the assumption that modals take untensed complements. By contrast, Spanish simple conditional morphemes may display a past inferential reading without perfective *haber*. It can then be proposed that such morphemes are 'modals for the past': i.e. their modal operator scopes over a past tense operator, or takes a tensed proposition as complement. The paper does not discuss situation/lexical aspect effects on future/conditional affixes, which bear a resemblance to those on epistemic modals familiar in the literature (see Laca, 2012 for a discussion of Spanish, and relevant references). Those effects are in need of detailed study, but let us state them in oversimplified terms. Stative predicates with a simple future morphology may count as inferences about present events. For a parallel reading, eventive predicates need to combine future and progressive morphology. Namely, (1b) with a stative predicate and simple future morphology may count as a deduction about a present event. By contrast (3b) with an eventive predicate must combine future and progressive morphology for a similar inferential reading. Constructions with (clear) eventive predicates with just a future morphology such as *Esta niña se acatarrará* 'This little girl will get a cold' are usually prospective, with the intuitive idea being that progressive morphology is needed to hold them in the present (and see the Appendix for some potential variation on this count).

The speaker deduces the occurrence of the event via some clues, which may be visual or not. This means that there are instances where visual evidence counts as direct, and instances where it counts as indirect.

(3) a.   **Estará** lloviendo (en este mismo momento).
         Be.Fut raining   (in   this same   moment)
         'It must/might/may be raining (at this very moment).'

     b.   Las patatas se **estarán quemando**.
         The potatoes Refl be.Fut   burning
         'The potatoes must/might/may be burning.'

As illustrated in (4b–5b), simple futures and conditionals with/without progressive/perfect morphology may also partici-pate in readings related, but not completely identical, to the ones in (1–3). In Spanish grammars, such readings are traditionally known as 'concessive', among several other terms. These readings suggest disagreement, doubt, surprise, a situation contrary to expectations – or contrast, as an anonymous reviewer suggests. Such interpretive features are shared by so-called admirative constructions in languages of the Balkan region, and they fit the intuitive label 'unprepared mind'. Thus, in this paper type (4b–5b) is dubbed '**mirative**' from now on.[7]

(4) a.   Juan habla muy claro.
         John speaks very clear
         'John speaks very clearly.'

     b.   **Hablará** claro, pero yo no le entiendo nada.
         Speak.Fut clear, but I Neg him understand nothing
         'He may/might speak clearly, but I do not understand anything he says.'

(5) a.   Juan era el mejor cantante.
         John was the best singer
         'John was the best singer.'

     b.   **Sería** el mejor cantante, pero no votaron por él.
         Be.Cond the best singer, but Neg vote.3Pl for him
         'He may/might have been the best singer, but they did not vote for him.'

Inferentials such as (1–3) suggest that the speaker has a relatively high level of confidence in the indirect information, and goes on to accept its validity. By contrast, prototypical miratives such as (4b–5b) suggest that the speaker doubts or challenges the validity of the evidence.

The aim of this paper is to set inferentials and miratives against the background of recent debates on modality, evidentiality, and mirativity in formal semantics and pragmatics (a.o. see Faller, 2002, 2011; von Fintel and Gillies, 2010; Kratzer, 2012; Matthewson, 2011; Matthewson et al., 2007; Davis et al., 2007, and references in those works). Within this perspective, the paper argues for the following points in informal terms.

Section 2 addresses the recent debate on whether evidentials belong (partially) in semantics, or should be assigned only to pragmatics. Spanish inferentials and miratives are items that pass standard tests for elements that contribute to propositional content, so the conclusion is that they are not illocutionary operators/parenthetical markers, but modal propositional operators (partially) located in semantics.

Section 3 views inferentials and miratives from the perspective of formal semantics debates on the connection between modality and evidentiality. One view is that modals care about reduced levels of certainty, and evidentials about types of information, so the two should not be conflated. Section 3.1 adopts an alternative view that blends the two categories (a.o. von Fintel and Gillies, 2010), where inferentials and miratives combine both modal and evidential properties. Section 3.1 shows that inferentials and miratives always care about (indirect) information, and may associate with a high degree of certainty; this places them among modals with an evidential modal base.[8] Section 3.2 shows that the

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[7] Jacobsen (1964) is the source of the 'mirativity' label, and Aksu-Koç and Slobin (1986) of the 'unprepared-mind' label for Turkish. See, among others, DeLancey (1997, 2001, 2012), Aikhenvald (2012) for definitions, and a summary of typological debates on whether mirativity should be viewed as independent, or a subcategory of evidentiality. Recent formal semantics proposals on miratives include those of Sauerland and Schenner (2007) on Bulgarian, Peterson (2010) on Gitsan, and Torres Bustamante (2012) on Spanish imperfects with emphasis on Andean Spanish.

modal force of inferentials and miratives may vary: they may associate with high levels of certainty, or with reduced levels. Thus, the proposal is that the evidential modal in inferentials and miratives is a degree expression amenable to flavors that sometimes resemble necessity and other times possibility. This makes inferentials and miratives reminiscent of gradable adjectives (Kennedy and McNally, 2005), but with differences. Since inferentials and miratives invoke different levels of confidence in the indirect information, section 3.3 concludes by mentioning two factors that may influence such a variability in force: one that restricts the nature of the evidence, and another one that restricts the source of the evidence. Both factors are familiar in discussions of modals but, to my knowledge, have not been related in the way proposed here. Regarding the nature of the evidence, the idea is that inferentials and miratives may access ordering sources of two types recently discussed by Kratzer (2012) for evidential modals: i.e. the one she dubs 'realistic', and the one called 'informational'. I propose that realistic ordering sources result in higher levels of confidence in the indirect information, so in inferentials and miratives whose modal force can be called 'strong'. By contrast, informational ordering sources result in lower levels of confidence, and identify inferentials and miratives that can be called 'weak'. Regarding the source of the evidence, the idea is that levels of confidence may also be affected by anchoring conditions in the evidential modal. In simple terms, inferentials and miratives differ from canonical epistemics and are reminiscent of predicates of personal taste such as *tasty* (see Stephenson, 2007, a.o.). That is, they need not be oriented towards the speaker when in main clauses, or towards the subject of the matrix clause when in embedded clauses. Thus, speaker-orientation results in higher levels of confidence in the indirect information.

In sum, inspired by current debates on modality and evidentiality in the formal semantics and pragmatics literature, the proposal is that Spanish inferentials and miratives share a gradable evidential modal based on indirect evidence. Such a modal can access either a realistic or an informational ordering source in the sense of Kratzer (2012). Finally, this modal displays an ambiguous anchoring behavior reminiscent of predicates of personal taste, so can be speaker-oriented/subject-oriented, or not. Ordering sources and anchoring conditions, then, are two factors that conspire to affect levels of confidence in the indirect information.

The paper concludes with an Appendix that lists for future research some consequences for variation of the ideas in the paper.

2. Inferentials and miratives as modals

Inferential and mirative future and conditional affixes are modals of an evidential type. Thus, inspired by recent proposals in the formal semantics literature on the relations between modality and evidentiality, this section first introduces the tests that classify such affixes as modals.

The recent formal semantics literature has developed some precise tests to show that evidentials may belong to two different formal types cross-linguistically, and to distinguish between the two types. On the one hand, some evidentials are said to exhibit a descriptive meaning that contributes to truth functional content (see Matthewson et al., 2007, a.o.). Evidentials with such characteristics have been assigned to the class of (epistemic) modals, modulo some differences with some traditional members of the epistemic class. On the other hand, evidentials may be restricted to readings called expressive, which do not contribute to truth-conditional content (see Faller, 2002; Davis et al., 2007, a.o.). Such evidentials have been assigned to the class of illocutionary or parenthetical expressions, also modulo some differences with some members of the illocutionary family. On the basis of such tests, Faller (2002, 2011, and references therein), for instance, argues that Quechua encompasses some evidentials with modal properties, and some with illocutionary properties.

Not all the tests offered in the literature to distinguish between modal and other types of evidentials have proven equally successful to discriminate between the two upon further reflection.[9] This section briefly applies to Spanish the tests that seem to have stood scrutiny, which mainly rely on embedding. They show that inferentials and miratives display syntactic and

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[8] The paper adopts the well-known theory of modality most recently recapitulated in Kratzer (2012). Its main feature is that it assigns to modal expressions two parameters: (1) a modal base and (2) an ordering source that imposes restrictions on the modal base. Inferentials and miratives share an evidential modal base restricted by an indirect evidence presupposition, along lines first proposed by Izvorski (1997) for the Bulgarian evidential system. Section 3 adopts a novelty, which consists in the more recent proposal that the quantificational force of modal expressions need not reduce to necessity ($\forall$) or possibility ($\exists$), but is gradable (Yalcin, 2007; Rullmann et al., 2008; Lassiter, 2010; Deal, 2011; Kratzer, 2012, among others, for different approaches to this issue).

[9] Mainly inspired by Faller (2002), Matthewson et al. (2007) list eight tests, and argue that only four seem to establish valid distinctions between modal and illocutionary markers: (1) Embedding, (2) Assent/Dissent, (3) (In)felicity if embedded proposition is known to be false, and (4) (In)felicity if embedded proposition is known to be true. Matthewson (2011) later concludes that tests (3–4), which relate to the veracity of the prejacent proposition, do not establish a valid distinction. This reduces the inventory of valid tests to those discussed in this section: (1) Embedding, and (2) Assent/Dissent. Footnote 21 briefly revisits tests (3–4), suggesting that they are useful to distinguish between inferentials and miratives, which as modal categories may display different levels of confidence in the indirect evidence.

semantic characteristics that place them among modal categories that make a semantic contribution to the construction, and take propositional complements. Thus, these tests distinguish inferentials and miratives from illocutionary and parenthetical items, which cannot embed. They also serve to add support to a hypothesis already entertained for Spanish by Gennari (2000) and Bravo (2002), who place inferential future affixes among (traditional) epistemic modals.

The tests that have proven successful in discriminating between modal and illocutionary/parenthetical expressions depend on the general idea that when an item can be syntactically and/or semantically embedded, it contributes to the propositional content of the construction.[10] Spanish inferentials and miratives embed felicitously both in syntactic and semantic terms.

2.1. Embedding

Let us illustrate traditional syntactic embedding. Futures and conditionals display present/past evidential readings when in (a) adjunct clauses, (6a–b), and (b) restrictive relatives, (7a–b). Example (7a) from CREA (Real Academia Española: Corpus de referencia del español actual in <http://www.rae.es>)[11] illustrates a common strategy in descriptions. Namely, characteristics amenable to direct observation are in the present tense, and those less amenable to direct observation that rely on indirect information, including logic, are in the future. Sentence (7b) is the past conditional counterpart of (7a), and (7c) illustrates a mirative in a restrictive relative.

(6)   Marta no a. contesta al teléfono porque **estará** de vacaciones/
                  /b. contestó al teléfono porque **estaría** de vacaciones.
       M. Neg a. answers /b. answered to.the phone because be.Fut/ b. be.Cond of vacations
       'Martha a. does/b. did not answer the phone because she a. might be/b. might have been on vacation.'

(7)   a.   [Es] una mujer   que le   gusta comer, . . . que **tendrá**   marido   e   hijos. . .
           [Is] a   woman that her like   eat,   . . . that have.Fut husband and   children
           '[It is] a woman who likes to eat, . . . who must have husband and children. . .'
           1983. Marta Portal. Pago de traición.

      b.   Era   una mujer   que le   gustaba comer, . . . que **tendría**   marido   e   hijos. . .
           Be.Impf a   woman who her like.Impf eat,   . . . who have.Cond husband and   children
           'It was a woman who liked to eat, . . . who must have had husband and children. . .'

      c.   Es una mujer   que le **gustará** comer, pero no   engorda.
           Is a   woman who her like.Fut eat,   but Neg gain.weight
           'It is a woman who might like to eat, but she does not gain weight.'

Futures and conditionals can also be embedded under verbs of propositional attitude with indicative complements, as in inferentials (8a–b) and (9), and mirative (10) (for speaker-orientation and anchoring conditions see section 3). Sentences (8a–b) speak of a deduction by the matrix subject *Juan*; thus, their inferentials are semantically embedded. By contrast, the parenthetical *me parece* 'it seems to me' after the complement clause in (8c) must be interpreted as a comment on the matrix; that is, it is not semantically embedded.

(8)   Juan cree/piensa/dice que los niños se a.   **estarán   peleando** ahora/
                                              b.   **estarían   peleando** ayer.
       John believes/thinks/says that the children Refl a. be.Fut fighting now/ b. be.Cond fighting yesterday
       'John believes/thinks/says that the children a. must be fighting now/b. must have been fighting yesterday.'

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[10] English epistemics are difficult to embed. This has been seen as support for the idea that they do not contribute to truth-conditional content, similar to illocutionary markers. The recent consensus, however, is that epistemic modals are embeddable, and contribute to propositional content (among others, Faller, 2002; Papafragou, 2006; Portner, 2009; von Fintel and Gillies, 2010). Spanish inferentials and miratives escape some embedding restrictions of traditional epistemic modals, and this supports their status as bona-fide modals. Nevertheless, inferentials and miratives cannot appear in *if*-clauses, which do not tolerate future and conditional morphology, or in subjunctive complements. I consider such restrictions morpho-syntactic, not semantic.

[11] All examples with a cited source are borrowed from CREA. Morpheme-by-morpheme glosses and English translations are mine, and only approximate.

    c.   Juan cree   que los niños   se   **estarán peleando** ahora, me parece.
          John believes that the children Refl be.Fut   fighting   now,   me seems
          'John believes that the children must be fighting now, it seems to me.'

(9)   Le   dicen   que los músicos **estarán ensayando** y   por eso no   le   dejan entrar.
        Him tell.3Pl that the musicians be.Fut   rehearsing and for this Neg him allow go.in
        'They tell him that the musicians may be rehearsing, so this is why they do not allow him to go in.'

(10)   Elena contesta que **será**   una histérica, pero que no   quiere ver más a su jefe.
       Helen replies   that be.Fut a   histerical, but that Neg wants see more to her boss
       'Helen replies that she might be (considered) a hysterical person, but that she does not want to see her boss anymore.'

Questions count among embedding contexts that distinguish between items that contribute to propositional content and illocutionary/parenthetical expressions. That is, semantic embedding under a question operator is excluded for illocutionary items, not for items that contribute to propositional content. Bello (1847–1860:691(b) p. 425) already noted that questions constitute natural contexts for modal futures and conditionals. Wh-questions are (11b–12), a yes–no question is (13), and an embedded question is (14).[12]

(11)   a.   Ayer   encontraron otros siete cadáveres.
          Yesterday found.3Pl   other seven corpses
          'Yesterday they found seven other bodies.'

      b.   Por   qués los **matarían /habrán matado?**
          Why them kill.Cond/   have.Fut killed
          'Why might have them be killed?'

(12)   Quién **habrá   traido**   la   noticia?   (as cited by Bello)
       Who   have.Fut brought the news
       'Who could/might/may have brought the news?'

(13)   ¿**Estará** un río   cultural … **corriendo** ya   … en las mentes de los obreros…?
       Be.Fut a   river cultural … running   already … in the minds of the workers
       'Could a cultural river… be flowing already…in the minds of the workers?'
       1990. Basáñez, Miguel. El pulso de los sexenios, 20 años de crisis en México.

(14)   Preguntan si los niños   **estarán durmiendo** en este momento.
       Ask.3Pl   if the children be.Fut   sleeping   in   this   moment
       'They are asking if the children could be sleeping right now.'

In discussions of epistemic modals, it is often remarked that it seems unusual for speakers to question their own knowledge state. This is viewed as a reason why epistemics sound particularly unnatural if not ungrammatical in first person interrogatives. Inferentials and miratives do not exhibit similar restrictions in contrast with traditional epistemics. Inferentials and miratives are evidential modals whose primary concern is to encode a body of information that counts as indirect. Unlike classical epistemics, they need not encode a precise knowledge state in a speaker. Thus, inferentials can be easily found in non-rhetorical first person questions that search some information external to the speaker, or questions that search information internal to the speaker, which Papafragou (2006) labels 'subjective' modality: (15b).

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[12] A reviewer mentions that parentheticals such as *me sigues*? 'Do you follow me?' in (i) may carry interrogative intonation. Note, however, that this parenthetical does not affect the descriptive/propositional content of the initial declarative clause, and its expressive content is reminiscent of (afterthought) comments of the type of *cuidado* 'attention'.

(i)   Los niños   {a. están   /b.estarán} durmiendo ahora, {me sigues?   / cuidado}.
     The children {a. be.Pres /b. be.Fut} sleeping   now,   { me follow.2Sg/   attention!}
     'The children {are/must be} sleeping now, {do you get it?/attention!}'

(15) a.   Es que me hace   unos gestos   muy raros   con la   cara y   yo me quedo:
Is   that me makes   some gestures   very strange   with the   face and I   me remain:
'It so happens that he makes very strange gestures with his face towards me and I remain puzzled!'

  b.   ''¿**Estaré diciendo** algo   raro?''   …[13]
Be.Fut   saying   something   strange
'' Could it be that I am saying something strange?''
TVE oral exchange

Negative constructions provide embedding contexts where futures and conditionals behave as modals with truth conditional effects, not as illocutionary markers or parentheticals. This is illustrated in (16b) as an answer to (16a).

(16) a.   El   editor está/estaba muy satisfecho con el   manuscrito.
The   editor is/was   very satisfied   with the   manuscript

  b.   No   **habrá/habría** ninguna errata en el   texto.
Neg   be.Fut/be.Cond no   typo   in the   text
'There {must not be/might not have been} any typo in the text.'

Finally, Inferentials and Miratives participate in a full-fledged evidential system that interacts with tense and aspect, as Bello already suggested (1847–1860:689 (314) p. 424). A survey of the interesting features of such a system is beyond the scope of this paper (but see the Appendix). However, such interactions place modal futures and conditionals amongst items that make truth functional contributions, and thus remove them from the class of illocutionary or parenthetical items. To this effect, consider inferential (17a–b) uttered in sequence by a detective when reconstructing the time line of a murder the previous day. Compare it to (17c) as a corroborating reply by a witness of the departure and arrival, with tenses that may be called 'direct', not 'indirect' or inferential.

(17) a.   El   asesino **llegaría**   a las tres   ayer   viernes.
The   assassin arrive.Cond at the three   yesterday Friday
'The murderer must have arrived at three yesterday, Friday.'

  b.   El   mayordomo **se habría   marchado** a las dos.
The   butler   Refl have.Cond left   at the two
'The butler must have left at two.'

  c.   Sí,   efectivamente, ocurrió   así. Cuando un tipo llegó   a las tres   el   mayordomo
Yes, in.effect,   happened so. When   a guy arrived at the three the butler
ya   se había   marchado.
already Refl have.Impf left.
'Yes, this is what truly happened. When a guy arrived at three the butler had already left.'

Precise formal analyses for modalized statements such as (17a–b) await development, but such examples show that conditionals used as inferentials contribute compositionally to temporal readings already familiar in semantic discussions of Spanish tenses in the 'direct' system in (17c).

The orientation of the modal claim or deduction in (17a–b) is always present or anchored to Speech Time, as stated. However, the system applied to the depicted eventualities in the prejacent replicate the temporal/aspectual relations familiar in the 'direct' system. In other words, the deductive conditional in (17a) is a modal counterpart for the 'direct' preterit/perfective in episodic (17c): it establishes a precedence relation, and places Topic Time (the arrival of the murderer) in the past with respect to Speech time. Likewise, the inferential perfect conditional in (17b) is a modal counterpart for a 'direct' past perfect/pluperfect in (17c) for events that culminated before another past time; it places the Event Time (the departure of the butler) before the Topic time within the eventuality.

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[13] An anonymous reviewer mentions that conditional *estaría* seems fine in (15). In that case, the deduction is about a past event, i.e. [Modal [Past [Progressive VP]]]: 'Could it be that I **was** saying…?'. See the Appendix for a purely reportative use of conditionals deemed literary. As the examples in the text suggest, inferential futures and conditionals belong in colloquial style, but are not excluded from literary styles.

2.2. Assent and dissent

A second battery of tests that show that modal futures and conditionals contribute to propositional content falls under the labels 'Assent'/'Dissent'. Such tests seek to establish whether agreement or disagreement may be placed on the modal claim, not just on the prejacent proposition. The general idea here too is that items that can be agreed or disagreed with contribute to truth conditions, and should not be considered illocutionary or parenthetical markers. Thus, if the modal can be challenged, it contributes to semantics, not only to pragmatics.

Constructions with modal futures and conditionals allow agreement/disagreement both with the prejacent, and the modal. Let us begin with agreement/disagreement with the prejacent. In the dialogue in (18a–d) between an interviewer and a popular singer, (18d) serves to illustrate agreement with the prejacent: 'Yes, I am totally fed up'. In literary (19a–c), (19c) illustrates disagreement: 'No, I am tireless'.

(18) a. La   demanda contra I. P.   parece el   cuento de nunca acabar.
          The demand   against I.P   seems the story of   never to.end
          'The claim against I. P. seems like a never ending story.'

      b. IP: Aunque   parezca mentira,   sigo   esperando después de cuatro años.
          Even.though seems   lie, continue. 1Sg waiting   after   of four   years
          'Even though it may seem incredible, I am still waiting after four years.'

      c. Interviewer: **Estará** ya   harta...
          B.Fut   already fed.up
          'You must be fed up already.'

      d. I.P.: Completamente.
          'Completely.'

                                                                              Tiempo, 16/07/1990

(19) a. Llevo   años   sin   dormir, ...
          Carry.1Sg years without to.sleep
          'I have not slept for many years, ...'

      b. **Estará** muy cansado.
          Be.Fut   very tired
          'You must be very tired.'

      c. No, soy   incansable.
          No, be.Pres tireless
          'No, I am tireless.'

                                                              1989. L. Landero, Juegos de la edad tardía.

Agreement/disagreement with the modal claim, not the eventuality encoded in the prejacent, is also possible with futures and conditionals. This again shows that the relevant morphemes contribute to truth conditions. Illustration is limited to disagreement in (20–21).

The relevant reading in (20b), an example inspired in (Faller, 2002), is where speaker B challenges the modal claim by speaker A in assertion (20a): i.e. you should not be so certain about the correctness of your thinking.

(20) a. Speaker A: El   mayordomo **será**   el   asesino.
                      The butler   be.FUT the assassin.
          'The butler must be the murderer.'

      b. Speaker B: No es verdad. Hay   muchos otros sospechosos, y   el
                     Neg is   true.   There.are many   other suspects,   and the
          mayordomo puede ser totalmente inocente.
          butler   can   be totally   innocent.
          'It is not true. There are many other suspects, and the butler may be completely innocent.'

In the dialogue in (21), speaker B implies that speaker A exaggerates: it is unreasonable to think of kidnapping. The challenge here too affects just the modal, as speaker B does not suggest that kidnapping is not a crime.

(21)   Context: Mother comes into the living room with a panicky look and utters a. Father replies with b.
   a.   El   niño   no   está   en su cuarto. Lo **habrán   raptado/raptarían**   ayer noche.
        The child Neg is   in his room.   Him have.Fut kidnapped/kidnap.Cond last night
        'The child is not in his room. He must have been kidnapped yesterday night.'

   b.   Qué   tonteria! Mira a ver si está en el   jardin.
        What silliness! Look to see if is   in the garden
        'Don't be silly! Check to see if he is in the garden.'

Sentences (20b–21b) are ambiguous, and may also constitute instances of disagreement with the prejacent. If (21b) is understood in terms of disagreement with the prejacent, it suggests that speaker B thinks that kidnapping children is not a crime. Recall that when the challenge is on the modal, the suggestion is that speaker A is unnecessarily worried.

   In sum, this section showed that inferentials and miratives comply with tests in the formal semantics literature for modal expressions. They share some properties of traditional epistemics, but also escape some of the syntactic and semantic restrictions noted for such items. Section 3 shows that inferentials and miratives primarily care about a body of indirect information, and differ from traditional epistemics, as their main concern need not be the mental state of a speaker who vouches for the information.

   Concluding section 2, inferentials and miratives are modal categories for at least three reasons. First, they contribute to propositional content, can be syntactically and semantically embedded, and take propositional complements. Second, they participate in a complex set of formal relations with tense and aspect. Third, they allow for agreement or dissent with both the modal claim and the prejacent proposition.

3. Futures and conditionals as degree modals: the evidential component

   Section 2 argued that inferential and mirative morphemes are modal items, or encode a propositional semantic operator, which takes scope under or over other semantic operators, and interacts with them in the construction. In this way, future and conditional morphemes contrast with speech act markers, which cannot be semantically embedded.[14]

   Section 3 explores some theoretically interesting characteristics of inferentials and miratives related to their evidential character.[15]

   The first characteristic is that inferentials and miratives always report on evidence that is indirect. That is, these modal expressions have as their main concern a body of indirect information, with the consequence that the speaker or the grammatical subject of the construction may not necessarily vouch for this body of information.

   A second characteristic of inferentials and miratives also preliminary related to their indirect evidential nature concerns their apparent modal force. As we saw, inferentials and miratives are always encoded in a future morphology for the present, and a conditional morphology for the past. However, at an interpretive level, such morphology associates with a variability that translates into several levels of certainty, confidence, or trustworthiness regarding the reliability of the indirect information. A traditional view expressed in my terms is that there seemingly is a higher threshold in inferentials, suggesting agreement with the indirect information. There is less certainty in miratives, suggesting disagreement with the provided information, unmet expectations, or contrast. A comparison with Spanish modal verbs supports variability in modal force in inferential and miratives, since both may correspond to necessity *deber* 'must', or also to possibility *poder* 'can'. A comparison with English reinforces the same idea, as inferential and mirative affixes may sometimes be rendered by *must*, a strong modal, and other times by weaker modals including *might*, *may*, or *could*. Given such variability, the proposal is that inferential and mirative morphemes encode in their denotation a shared gradable or degree modal expression, one that does not reduce to either necessity or possibility (see Yalcin, 2007; Rullmann et al., 2008; Lassiter, 2010; Deal, 2011; Kratzer, 2012, among others, for different views on this topic). This second characteristic makes inferential and mirative affixes reminiscent of gradable adjectives (see Kennedy and McNally, 2005, among others), but with differences, gradable modal adjectives in Spanish such as *probable* 'probable' (i.e. *muy probable* 'highly probable' and *muy poco probable* 'very unlikely'), and English counterparts.

   Necessity epistemic modals such as *deber* 'must' and those that exclusively claim possibility such as epistemic *poder* 'can' may be called modals that have a dual, as each represents an opposite pole in quantificational force: universal vs. existential. In the proposal in this paper, inferentials and miratives encode an evidential modal that as a gradable expression may invoke ranges of confidence that sometimes are suggestive of necessity and other times of

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[14] See Demonte and Soriano (in press), who argue that the Spanish complementizer *que* may function as an illocutionary evidential, and who give references for related works on evidentiality in Spanish.
[15] See also Escandell (2010), who classifies futures as evidentials, but does not specify their modal or non-modal status.

possibility. In contrast with *poder* 'can' and *deber* 'must', then, the relevant item in inferentials and miratives is a modal without a dual.

Given the contrasting forces possible in inferentials and miratives, the last issue explored in section 3.3 concerns possible factors that may affect their gradable nature. For this, I combine two dimensions familiar in discussions of modals, and apply them to distinguish between 'strong' inferentials and miratives, those that associate with high levels of confidence, and 'weak' inferentials and miratives, those that associate with less confidence.

The first factor relates to the nature of the indirect evidence. Inspired by Kratzer (2012) (see also Yalcin, 2007), I propose that inferentials and miratives may access two different ordering sources: those labeled 'realistic', and those called 'informational'. For Kratzer, realistic ordering sources represent evidence of 'things', and 'track particular bodies of facts in the world of evaluation', including events of seeing, hearing, etc., (which in our Spanish cases may count as indirect or direct evidence, as we saw). The proposal here, then, is that with inferentials and miratives, realistic ordering sources result in a modal force that is 'strong'. According also to Kratzer, informational ordering sources involve backgrounds viewed as information content or the intentional content of sources of information, such as rumors, reports, etc. The proposal here is that with inferentials and miratives, informational ordering sources result in lower levels of confidence, or a modal force that is 'weak'.[16]

The second factor that affects levels of confidence in inferentials and miratives relates to the source of the indirect evidence. It concerns their anchoring behavior. In simple terms, inferentials often resemble canonical epistemics such as *deber* 'must' and *poder* 'can' in anchoring behavior. They are oriented, anchored, or bound to (a) the speaker when in matrix declarative clauses, and (b) the matrix subject when embedded under propositional predicates of a declarative type. Thus, inferentials often depend on the presence of a 'judge' in the sense of Lasersohn (2005), and Stephenson (2007). By contrast, miratives are less restricted in anchoring behavior. They (a) can be free or not anchored to the speaker when in a matrix clause, and (b) need not be oriented towards/anchored by the matrix subject when embedded under verbs of propositional attitude. In this way, miratives resemble predicates of personal taste such as *tasty*, which need not depend on a 'judge'. Inferential and mirative morphemes share an evidential modal, so their anchoring variability suggests that such a modal displays an ambiguous semantics similar to those of predicates of personal taste (see Stephenson, 2007).

In sum, constructions with verbs with future and conditional morphology with an evidential function are propositions for which there is a certain type of indirect evidence. They are composed of a degree modal encoded in a future/conditional affix, which makes this type of morphological category partially reminiscent of gradable adjectives. Domain restrictions on this degree modal relate to two different ordering sources, and its anchoring characteristics are similar to those of predicates of personal taste. Ordering sources and anchoring properties combine to trigger several levels of confidence/ modal forces relating to the indirect information. With this outline in mind, the next sections provide support for the sketched characteristics, mentioning in passing their theoretical import for concerns in the formal semantics literature.

3.1. An evidential component: indirect information with a high level of certainty

To place inferentials and miratives amongst evidentials, let us address some theoretical consequences of their characteristics, when viewed from the perspective of debates on the relation between modality and evidentiality.

In the literature, we find two views on the relation between modality and evidentiality. One view is that it is characteristic of modals to invoke reduced degrees of certainty to the prejacent proposition. By contrast, evidentials are considered to encode sources or types of information, not reduced degrees of certainty. On this approach, modals and evidentials are distinct categories that should not be identified with each other (among others, De Haan, 1999; Aikhenvald, 2004). An alternative view adopted in this paper is that modals and evidentials need not be distinct categories. This idea is explicitly defended by von Fintel and Gillies (2010), who argue that the English epistemic *must* signals deduction based on indirect information, without being necessarily tied to uncertainty (also Karttunen, 1972; Dendale, 1994; Palmer, 2001, among others).

von Fintel and Gillies' views on *must* directly extend to Spanish inferentials, and also serve for miratives. That is, inferentials and miratives also signal a deduction based on indirect evidence, and need not be tied to a reduced degree of certainty. Thus, the Spanish affixes are representative of an evidential category.

Let us develop the argument. von Fintel and Gillies give a context involving an individual who has lost a ball, and knows with full certainty that it is in either box A, box B, or box C. The individual states: *The ball is in A or B or C. It is not in A. It is not in B*, and concludes with *So, it **must** be in C*. In Spanish, a similar deductive sequence is felicitous with a future affix in an inferential role: (22a–c).

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[16] Davis et al. (2007) consider that evidentials are illocutionary operators, and they relate levels of confidence to evidential hierarchies of the type in (Willet, 1988). They suggest, for instance, that information obtained by personal experience is more reliable than information obtained by hearsay. Here I capture similar effects via ordering sources for modals. As Rooryck notes (2001), ordering sources play roles that are similar to those of types of evidence in evidential hierarchies.

(22) a.   La   pelota está   en A, en B, o   en C.
            The   ball   be.Present in A, in B, or   in C.

      b.   No   está   en A.   No   está   en B.
            Neg   be.Present.3sg in A.   Neg   be.Present.3sg in B.

      c.   Así   que **estará**   en C.
            So   that be.Future in C.

As stated, inferentials (and miratives) are not felicitous if the information is direct in the sense that the event encoded in the prejacent proposition is directly observed. This calls for some clarification on what counts as indirect evidence in their respect. The clues can be visual, (23), or auditory, (24), or be based on logic and general knowledge, etc.

(23) a.   Les   observó   mientras descendían   por la   escalera …. Hablaban   con   gesto
            Them   observed.3Sg while   descended.3Pl by   the   stairs   … Spoke.3Pl with gesture
            enojado y   volvían la   cabeza a   intervalos.
            angry   and   turned   the   head   at intervals
            'He watched them as they descended the stairs . . . They spoke with angry gestures and turned their heads at intervals.'

      b.   **Estarían maldiciéndole**, supuso   Antonio.
            Be.Fut   cursing.him,   supposed Antonio
            'They must be cursing him, Antonio assumed.'
            1984. Tomás García, José Luis. La otra orilla de la droga.

(24) ¿**Estaré soñando**? Oigo   ruidos en la   casa.[17]
      Be.Fut dreaming? Hear.1sg noises in   the   house.
      1988. Ocampo, Silvina. Cornelia frente al espejo.
      'Could I be dreaming? I hear noises in the house.'

More precisely, (23b) tells us that *Antonio*, the subject of a matrix clause with the embedded inferential, could see some individuals talking, but (23a) tells us that he could not hear their precise words. Thus, *Antonio* witnessed visual clues, not a cursing event, to come to a deduction; so the evidence counts as indirect. With the last clause in (23b) eliminated, and the deduction assigned to a speaker/writer, the evidence also counts as indirect based on the clues in (23a). With (23a) as a first step in a conversation, and inferential (23b) as a hearer's deduction, the evidence too counts as indirect. In all those circumstances, no cursing event (i.e. prejacent proposition) is witnessed, and visual, auditory, or logical clues all count as indirect evidence.

   After this aside on the (propositional) interpretation of what would be direct evidence, let us return to (22) to conclude with certainty. This example indicates that a future can be used when possibilities A and B have been eliminated. However, if the individual opens C and sees the ball (i.e. has direct evidence for the proposition 'ball now in C'), future (25a) is not felicitous, and present (25b) is the option.

(25) a.   #Ya   la   veo. **Estará** en C.
            Already see.Present.1sg   be.   Fut.3sg in   C
            '#I see it already. It must be in C.'

      b.   Ya   la   veo. **Está**   en C.
            Already see.Present.1sg. Be.   Pres.3sg in   C
            'I see it already. It is in C.'

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[17] It is sometimes noted that inferentials have a preference not to be utterance initial. This characteristic should not be built into their formal analysis. On the one hand, they can be initial in questions, as in the text. On the other hand, they can precede claims justifying the inference: (i). In discourse, inferentials, then, can be 'anaphoric', 'cataphoric', or 'free'.

(i)   Hace poco, un amigo mío que presume de 'estar al día', me comentó, entre confiado y
       complaciente: '**Estarás** contento. Nunca se ha hablado tanto de vosotros, los militares.'
       ABC, 28/12/1983
       'Recently a friend of mine who claims to "keep up", said to me, between confident and complacent: "You must be happy. Never before
·   people had spoken so much of you, the military."'

In brief, a future morpheme with an inferential reading behaves like English *must*. Thus, extending Fintel and Gillies' conclusion, a prejacent proposition with an inferential future is infelicitous not when the speaker is certain about this proposition, but when the speaker's evidence for the proposition is direct. To repeat, inferential affixes are expressions that crucially appeal to indirect information, and may also associate with a high degree of certainty. Thus, they are modal categories with an evidential component.

Now let us examine miratives, where similar conclusions apply. Miratives are based on indirect information, and can also be felicitous when speakers are certain about the prejacent proposition in the modal claim. This is illustrated in (26c), which tells us about the results of a motorcycling competition, with (26a–b) for the required information.

(26)   a.   Crivillé está contento porque ha superado a su gran rival por el título.
            'Crivillé is happy because he has outperformed his main rival for the title.'

        b.   Quien no estaba demasiado contento es Jorge Martínez Aspar, que obtuvo el cuarto mejor crono.
            'The one who was not too happy is Jorge Martínez Aspar, who got the fourth fastest time.'

        c.   **Estará** en primera línea, pero quiso acercarse más a los ''sorprendentes''
            Be.Fut in first line, but wanted.3Sg get.close.Refl more to the amazing
            tiempos de Spaan y le fue imposible.
            Times of Spaan and him was impossible
            'He **might be** in front, but he wanted to get closer to the ''amazing'' times of Spaan and found it impossible.'
            ABC, 06/08/1989

In (26c), mirative *estará* invokes high confidence, since (26b) tells us that the relevant competitor is fourth, a proposal incorporated into the common ground as valid information by the participants in the discourse. The sequence also illustrates that miratives often display a hearsay flavor. However, miratives may also concern eventualities that the speaker advances as known/factual, not echoic of a previous statement.

Miratives reporting disagreement, doubt, or surprise about events advanced as factual are common. Thus, parallel to (26c), (27) is a felicitous comment about a current minister ((28) is the past eventuality in the conditional).

(27)   Gómez **será** el ministro de educación ahora, pero no {debía/debería} serlo.
            G. be.Fut the minister of education now, but Neg {must.Impf/must.Cond} be.it
            'Gómez might be the education minister now, but he should not be.'

(28)   Gómez **sería** el candidato del partido en aquel momento, pero no debía haberlo sido.
            G. be.Cond the candidate of.the party in that moment, but Neg must.Impf have.it been
            'Gómez must/may/might have been the party's candidate at that moment, but he should not have been.'

Sentences (26c–27) allow us to conclude that, like inferentials, miratives are felicitous when there is certainty about the prejacent proposition, so they display evidential properties.

In sum, inferentials and miratives both have evidential semantics, as they constitute deductions based on indirect information. In addition, they may both invoke a maximal value/maximum degree of confidence in their veracity close to certainty/necessity, a second dimension often viewed as characteristic of evidentials.

3.2. Inferentials and miratives as degree expressions

In section 3.1, we saw that inferentials and miratives may associate with high levels of certainty. In this section, we see that they may also invoke reduced degrees of certainty, in partial contrast with epistemics such as *deber*, which is considered a strong modal, and *poder*, which is a weak modal. One unique affix, be it future or conditional, may display variability in force, so the conclusion is that inferentials and miratives encode in their morphology a gradable modal expression.[18]

The traditional view in grammars is to pair inferentials with possibility. Fernández Ramírez (1986), for instance, uses the label '*probable*' to describe them, and Alcina and Blecua (1975) speak of '*probabilidad*' in their context. So let us illustrate some contexts that highlight this dimension of their meaning.

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[18] Thus, a question left unexplored for lack of space is the precise degree characteristics of such a modal, or its scale, which differs from degrees for gradable adjectives. The following discussion suggests that it could be a maximum degree modal, with domain restrictions that lower its level of confidence. Another important question raised by an anonymous reviewer concerns 'contrast' and miratives. The reader suggests that miratives/concessives need not reduce to inferentials, and could be differentiated from them in terms of a contrastive topic. An alternative idea could be that miratives contain an additional operator for contrast related to focus, as sometimes envisaged in the semantic literature on tense.

Interrogatives constitute a linguistic context where modal force in inferentials seems weak. That is, when embedded under question operators, their force is close to possibility, with the speaker contemplating both *p* and *not p* as options. This is illustrated with matrix interrogatives in (24) above, and (29) below, and an embedded interrogative in (30b) within dialogue (30a–30b) borrowed from Aaron (2001) (I provide a translation that further clarifies its meaning, which appeared obscure to an anonymous reviewer). Interestingly, (30b) from an oral source with a colloquial tone shares all the formal features that make (30c) theoretically interesting. This last construction is inspired by an (English) sentence in an important philosophical discussion concerning knowledge and possibility (see DeRose, 1991).

(29) **¿Estaré llegando** o me **estaré perdiendo?**
Be.Fut arriving   or me be.Fut losing
'Could it be that I am arriving or could it be that I am getting lost?'

(30) a. ¿Y Paquito y María dónde están ahora? -
'And Paquito and María, where are they now?

   b. No lo sé si **estarán** con sus abuelos o **estarán** en Valencia dónde **andarán**.
'I do not know if they might be with their grandparents, or if they might be in Valencia, (I do not know) where they might be.'

   c. No sé   si Juan **tendrá**   cáncer hoy por hoy.   Sólo los médicos lo saben.
Neg I.know if John have.Fut cancer today by today. Only the doctors it know
'I do not know whether it is possible that, as of today, John has cancer (or not). Only the doctors know it.'

Instances with the speaker contemplating alternative options also exist in declarative form, with a strong necessity modal seemingly out of place. To illustrate, first person inferentials in declaratives such as (31b) represent another context for mere possibility. Here the information is presented as not totally reliable, with the speaker not truly vouching for the claim. A traditional view is that such examples show psychological distancing on the part of the speaker.

(31) a. Fátima, dije, ¿por qué no   has   contado todo eso en clase? . . .
F., said.1Sg, why   Neg have told   all   this in class
'Fatima, I said, why didn't you tell all of this in class? . . .

   b. Pues no sé. . . **Estaría pensando** en otras cosas, supongo.
But Neg know. . . Be.Cond thinking   in other things, suppose.1Sg
'Well I do not know. . . I must/may/could have been thinking of other things, I suppose.'
1980. Fernández Cubas, Cristina, Mi hermana Elba.

Miratives that indicate lower levels of acceptance of type (32b) are well known, and could be multiplied. They seem to be the mirror image of (26c). Namely, they challenge a proposal in a previous assertion, which apparently is not added to the common ground, and ask addressees to compare a non-modalized claim with a modalized claim, which is advanced as weaker. This also results in a hearsay flavor often associated with, but not necessarily inherent to miratives.[19]

(32) a. Se   quedó   helado. . . y sólo acertó   a decir: "Esa señorita es   una histérica".
Refl remained frozen. . . and only managed to say: 'That young   lady is a hysterical
'He froze . . . and only managed to say: "That young lady is hysterical."'

   b. **Estaría** histérica, pero le dije   una verdad como un templo.
Cond.be hysterical, but him told.1Sg a truth like a temple
'I might have been hysterical, but I told him a real big truth.'
Tiempo, 26/11/1.

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[19] An anonymous reviewer mentions that inferentials and miratives bring to mind English epistemic *should*, a modal also compatible with the denial of the prejacent. Spanish lacks a lexical equivalent for this epistemic, with some of its (relevant) readings encoded in *deber* when inflected in the conditional: *Debería haber llovido* 'It should have rained'. This again brings to light the particularly interesting character of Spanish inferentials and miratives, which partially encode in a syncretic inflectional morphology dimensions also found in a large variety of English epistemics, and different tensed forms of epistemic *deber* and *poder* in Spanish.

In conclusion, there are inferentials and miratives with high certainty, or a modal force that approximates necessity labeled 'strong'. There are also 'weak' inferentials and miratives with a lower degree of certainty, or a weaker force that approximates possibility. Such variability suggests that the evidential modal behind future and conditional affixes is a degree expression.

3.3. Ordering sources, anchoring conditions, and degrees of certainty

Section 3.2 concluded that inferentials and miratives share a modal that depends on indirect evidence, and this modal is a degree expression that associates with different levels of certainty. Given this situation, Section 3.3 closes by mentioning two factors that combine to impose restrictions on the indirect evidence: one that affects its **nature**, and one that affects its **source**. Namely, ordering sources for the modal impose conditions on the nature of the evidence, and its anchoring behavior imposes conditions on the source of the evidence. A combination of these two factors results in different scales of confidence or modal force for inferentials and miratives.

Let us examine each factor in turn. Beginning with ordering sources, according to Kratzer (2012:Chapter 2, p. 34), sources of information related to evidentials have a double nature, which results in two types of ordering sources she calls realistic and informational respectively. Inspired by this idea, the proposal is that in 'strong' inferentials of type (22c) and 'strong' miratives of type (26c), the evidence is viewed realistically, so the ordering source counts as realistic. By contrast, 'weak' inferentials and miratives of types (32b–31b) access ordering sources where the evidence is viewed informationally and not realistically. On this view, then, ordering sources impose restrictions on the **nature** of the evidence, resulting in different degrees of confidence.

Let us introduce the proposed dichotomy in oversimplified terms, and direct interested readers to Kratzer for detailed discussion, and technical details. Kratzer illustrates realistic and informational ordering sources for evidential modals by means of the context *There is a rumor that Roger has been elected chief*. If an evidential modal claim is understood along the lines of *Given the rumor, Roger must have been elected chief*, the conversational background is taken to represent a realistic ordering source where the speaker makes a strong claim about the actual world: Roger was elected chief in the actual world. That is, the assertion is that in all the worlds/situations in which there is the same rumor as in the actual world, Roger was elected chief. By contrast, if an evidential modal claim is understood along the lines of *According to the rumor, Roger must have been elected chief*, it is indicative of an informational ordering source. The informational ordering source speaks of what the rumor says, or the content of the rumor, and, crucially, makes no claim about Roger being elected in the actual world. An informational ordering source for an evidential modal, then, allows speakers to utter a modalized sentence even when they are certain that Roger was not elected chief.[20]

Returning to the Spanish case, the proposal consists in assuming that both inferentials and miratives may access realistic ordering sources and informational ordering sources. A realistic ordering source correlates with a 'strong' modal force. Thus, in inferential (22c) and mirative (26c), the speaker or writer makes a strong claim about the actual world to the effect that the ball is in C in the first case, and that *Jorge Martínez Aspar* is among the first in the second case.

Inferentials and Miratives, however, may also depend on backgrounds understood informationally in the sense of Kratzer (2012). This results in a type of modal force that places doubts on the veracity of the prejacent. Mirative (32b) is a prototypical example of this situation; the evidential modal accesses an informational ordering source, which speaks of what a report, document, or statement, says, but makes no claim about its veracity. In this case, the speaker has the option of considering that the evidence does not count as trustworthy, and that it could be false. Thus, it is usual for such miratives to be understood along the lines of 'I am not a hysterical person, contrary to what was previously stated by some individual salient in the discourse (and my objection is a way to support this)'. The proposal that the available evidence may be viewed informationally, then, captures many characteristics assigned to mirativity in the typological literature, which include disbelief, doubt, etc. Mirative (31b) thus involves an 'unprepared mind' on the part of the speaker, and a prejacent proposition that counts among those that, to quote DeLancey (1997) 'have not been integrated into the speaker's picture of the world'. In this paper, mirativity in Spanish futures and conditionals is not a category independent from evidentiality or modality, as it involves an inference built on the basis of a gradable evidential modal with indirect information understood either realistically or informationally in the sense of Kratzer (2012). Thus, my view of mirativity closely approximates an early view by Jacobsen (1964). Namely, Jacobsen considers mirativity an ex post facto inference with some connotation

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[20] By contrast, 'strong' inferentials, (22c), and 'strong' miratives, (26c), are instances where the speaker may utter a modalized statement when certain about the veracity of the prejacent. This brings to mind the tests to differentiate between modals and illocutionary items listed in section 2. The distinction between realistic and informational ordering sources leads Matthewson (2011) to conclude that tests (3–4) concerning the veracity/falsity of the prejacent cannot be used to distinguish between modal and non-modal evidentials. Spanish inferentials and miratives are interesting from this perspective. They both belong within the modal family, as we saw, but they may be uttered both when the speaker is certain about the veracity of the prejacent, or when the speaker makes no claim as to its veracity. Given this situation, I suggest that tests (3–4) can be applied in Spanish to distinguish between 'strong' or 'realistic' and 'weak' or 'informational' inferentials and miratives.

of surprise associated with inferential evidentiality. As a reviewer suggests, it could be that, upon further reflection, miratives involve additional semantic ingredients involving a notion of contrast that distinguish them from pure inferentials.

Completing the overview of ordering sources with 'weak' inferentials, it is perhaps not as clear that evidence may also be viewed from an informational perspective in their connection. However, I propose in a tentative tone that such is also the case, when, for instance, speakers do not take full responsibility for self-ascriptions, as in (31b). As is the case with miratives, here too it seems that the modal affix triggers a reading that is not incompatible with the denial of the prejacent.

In sum, the degree modal of inferentials and miratives participates in a scale of confidence restricted by ordering sources. A maximal value or maximum degree of confidence close to certainty reminiscent of *must* results from ordering sources that view indirect information realistically. A minimal value or minimum degree of certainty close to possibility perhaps resminiscent of *should* results from ordering sources that view indirect evidence informationally.

The second factor affecting levels of confidence in inferentials and miratives has to do with restrictions on the source of the information, not on its nature. It involves speaker orientation, with inferentials often behaving like epistemics, and miratives being less restricted along the lines of predicates of personal taste in the sense of Lasersohn (2005) and Stephenson (2007). In brief, declarative inferentials are linked to a 'judge', which is the speaker when in a matrix clause, and 'shift'/are linked to the matrix subject when embedded under verbs of propositional attitude. The natural interpretation of the inferential in (1) partially repeated as (33a), then, is with the speaker as attitude holder/judge, similar to present epistemic *deber* 'must' in (33b).

(33)   a.   **Tendrá** fiebre.
           'It must be the
           case that she has
           a temperature.'

        b.   **Debe**   **tener**   fiebre.
           Must.Present have.Inf fever
           'It must be the case that she has a temperature.'

Inferentials and miratives can be embedded under propositional predicates (of saying, belief, thinking, certainty, etc.). When root clauses are embedded under such predicates, the attitude holder or judge in inferentials is the matrix subject, or 'shifts'. This applies both to nominative subjects, as in (34), and to dative subjects, as in (35) (epistemic <u>deber</u> is parallel but not illustrated). To repeat, inferentials in declarative clauses, then, are most often 'judge-dependent', so resemble epistemic modals.

(34)   Juan dice/ cree/   piensa/ que la   niña   **tendrá**   fiebre.
        J.   says/ believes/ thinks   that the little.girl has.Fut fever
        'John says/believes/thinks that it must be the case that the little girl has a temperature'.

(35)   A Juan se   le   antoja   que los niños   **estarán durmiendo**.
        To J.   Refl him appears that the children be.Fut   sleeping
        'It appears to John that it must be the case that the children are sleeping.'

Epistemics such as deber 'must' often sound unnatural in questions. However, future and conditional affixes with an evidential function are common and felicitous in such contexts. In the presence of a question operator, inferentials need not be speaker oriented (are not 'judge-dependent) when in interrogative root clauses. Embedded under verbs that take interrogative complements, they need not be anchored to the matrix subject, as illustrated in section 2 and (29–30) in this section.

Let us now turn to miratives from a linking perspective. In declarative clauses, their anchoring characteristics are less restricted than those of inferentials. This is observed in the 'weak' mirative in (32b), which is not anchored to the speaker, but relates to an individual or report that is salient in the context, allowing for a distancing effect on the part of the speaker. When embedded under predicates of propositional attitude, such miratives need not 'shift'/be anchored to the matrix subject, but may relate to an individual or report salient in the context, as in (36). Here Elena is not truly admitting that she was hysterical at some earlier point, in apparent disagreement with some claim. In other contexts disagreement may be with a general reputation: i.e. I am not a hysterical person contrary to what people believe. Then, these are cases where the speaker or matrix subject need not truly vouch for the modal claim, and compatibility with its denial becomes possible.

(36)   Elena contesta que **estaría**   histérica, pero que le   dijo   una verdad como un templo.
        E.   replies   that be.Cond hysterical, but that him told.3Sg a   truth   like   a   temple
        'Helen replies that she might have been hysterical, but she told him a real big truth.'

Miratives, then, resemble predicates of personal taste such as English *tasty* or Spanish *sabroso*. In cases like (37), personal taste predicates have been analyzed (see Stephenson, 2007) as being anchored to an individual salient in the discourse, not the speaker: the food is tasty for the dog (not the speaker).

(37)   a.   Qué   tal   la   nueva   comida   para   el   perro?
              What   so   the   new   food   for   the   dog?
              'How about the new food for the dog?'

        b.   Está   sabrosa   porque   (el   perro)   se   la   ha   comido   inmediatamente.
              Is   tasty   because   (the dog)   Refl   it   has   eaten   inmmediately
              'It is tasty because (the dog) has eaten it immediately.'

The above conclusion raises a variety of new questions in need of study, but I briefly conclude that a way to capture the above anchoring variation is if the evidential modal in inferentials and miratives is not 'judge'-dependent, but is equipped with the ambiguous semantics Stephenson (2007) assigns to predicates of personal taste. This allows for situations that involve a 'fixed judge', establishing a parallelism with epistemic modals, and for instances where there is no fixed 'judge', which allows reports by others and information that is not truly the speaker's.

Judge-dependency is usually viewed as an inherent property of epistemic modals. However, inferentials and miratives depend on an evidential modal that deals with a body of indirect information from a variety of sources. As stated, they do not necessarily make claims that the speaker vouches for. From this perspective, variation affecting the source of information is not surprising and even expected in their case. In brief, the evidential modal in inferentials and miratives is not judge-dependent so resembles a predicate of personal taste, and partially differs from epistemic modals, which are deemed to be judge-dependent. This situation fits well with the idea that both types of evidence and sources of evidence may be subject to restrictions when dealing with an evidential modal.

To summarize, 'strong' inferentials represent the maximum level of the scale, which results from the combination of a realistic ordering source and an orientation familiar in typical epistemic modals, where speakers are in charge of the information, or vouch for it. At the other end of the scale, we find 'weak' miratives indicative of an 'unprepared mind', disagreement, or doubt, which result from an informational ordering source combined with the flexible anchoring conditions typical of predicates of personal taste, with information that is not necessarily accepted by the speaker. Here the speaker may not take responsibility for the content of the prejacent, which comes from another source, leading to situations where the denial of the prejacent is not excluded in principle.

To conclude this section, inferentials and miratives involve indirect information. They may associate with near certainty or lower levels of confidence because their modal is a degree expression. Such a modal may access two different ordering sources that specify the nature of the information, and displays flexible anchoring characteristics relating to the source of the information. When realistic ordering sources are coupled to anchoring characteristics similar to those in traditional epistemic verbs, the result can be close to a necessity modal with the indirect information being trustworthy. When informational ordering sources combine with the freer anchoring conditions of predicates of personal taste, the result is closer to a weaker modal with the information not presented as trustworthy.

4. Conclusions

Inspired by recent discussions on modality and evidentiality in formal semantics, in this paper I informally examined the characteristics of two closely related readings of Spanish future and conditional morphemes dubbed respectively 'inferential' and 'mirative'. Inferentials and miratives represent present deductions about present eventualities with a future affix, and about past eventualities with a conditional affix. I proposed that such affixes encode an evidential modal involving a salient body of indirect information. Inferentials and miratives contribute to propositional content, can be syntactically and semantically embedded, and interact with tense and aspect. This justifies calling them modal expressions, not illocutionary markers or parenthetical items. The evidential modal in inferentials and miratives is a degree expression reminiscent of gradable adjectives, and does not reduce to necessity or possibility. This modal has the choice of accessing a realistic ordering source or an informational ordering source, and displays flexible anchoring characteristics comparable to those of predicates of personal taste. Ordering sources and anchoring behavior combine in ways that impinge on levels of confidence in the information, and result in an apparent variability in modal force.

Appendix A

This appendix briefly notes some consequences left to future research of the above proposals for variation within Spanish, and Spanish compared to other Romance languages.

A. As to internal variation, at least two features in inferentials and miratives lead us to expect potential differences: one concerns viewpoint aspect (perfectivity vs. imperfectivity), and the other situation aspect (telicity vs. atelicity).

A1. Viewpoint. Viewpoint aspect is morphologically neutralized in the Spanish inferential system. Evidential simple conditionals display a morphology etymologically related to the imperfect (i.e. –ía). However, such morphology seems 'fake' from an interpretive perspective. Conditionals of type (17a) partially repeated now may function as modal counterparts of 'direct' perfective forms in (17c), in addition to 'direct' imperfectives: see (5b).

(17) a.   El asesino **llegaría** a las tres ayer viernes.
            'The murderer must have arrived at three yesterday, Friday.'

      b.   Sí, efectivamente . . .. un tipo llegó a las tres.
            'Yes, in fact. . . a guy arrived at three.'

One consequence of such neutralization could be to obliterate the distinction between evidential conditionals and perfect futures in variants such as mine that also neutralize contrasts between 'direct' preterites and present perfects. To illustrate, Bello tells us that inferential conditionals correspond to 'direct' preterits, and inferential perfect futures to 'direct' present perfects, thus placing them within a formal evidential system in contrast with the 'direct' system. However, I do not share Bello's intuitions, given that inferential perfect futures and simple conditionals sound similar to my Castilian ear in (21a) partially repeated now.

(21) a.   El niño no está en su cuarto. Lo **habrán raptado/raptarían** ayer noche.
            'The child is not in his room. He must have been kidnapped yesterday night.'

Could the parallelism I perceive between the two forms in (21a) indicate a dialectal difference? Could it be that the much-discussed geographical neutralization that exists in Spanish variants between 'direct' preterites and perfects is transposed into the corresponding forms of the evidential system? I know of no discussion on this potentially interesting issue.

A2. Situation aspect. A second area where we may expect variation within Spanish is in the connections between future morphology and situation aspect. This is of theoretical importance from the formal perspective as noted in footnote 6. To explain, the sociolinguistic literature reports on variants where in natural speech future morphology is restricted to inferential readings, and such a morphology sounds literary with prospective readings. Variants of this type, then, should lack some naturally sounding contrasts involving stative vs. eventive verbs, which exist in variants such as mine where future morphology may also play a prospective role in both colloquial and literary styles. Let me clarify this potential difference. On the one hand, all variants should share without variation inferential readings for stative *Tendrá fiebre* and for eventive Estará *acatarrándose* along the lines of 'She must/may have a fever' and 'She must/may be getting a cold' respectively. On the other hand, variants where prospective readings reside only in periphrastic *Va a acatarrarse* 'She is going to get a cold' should lack (naturally sounding) contrasts between a (present) inferential *Estará acatarrandose* understood as 'She must/may getting a cold' and a (prospective) eventive Se *acatarrará* understood as 'She will get a cold'. In such variants the last sentence should sound stilted/literary, perhaps ungrammatical. Again, I know of no discussion on this topic, which could perhaps clarify the much-debated issue of whether prospective futures should also be analyzed as inferentials or not. Clearly, much remains to be discovered about potential variation in inferentials and miratives as participants in an evidential modal system where viewpoint and situation aspect interact with tense.

B. Concerning comparisons with other Romance languages, there appears to be considerable variation as to evidentiality. French, for instance, limits inferential readings with simple futures to être 'be' and avoir 'have', and lacks miratives. In literary and journalistic style, however, Spanish conditionals share with this language a purely reportative/ hearsay reading: (38a–b) (I owe (38a) to Olga Fernández Soriano). Type (38b) is criticized as a Gallicism in some style manuals, and compares to French (39), a reportative evidential for Dendale (1993).

(38) a.   La   razón   de ello estaría,   según   fuentes oficiales, en   la   bajada   de los
            The   reason for this be.Cond, according sources official, in   the   lowering of the
            tipos   de interés.
            types   of   interest.
            'The reason for this would be, according to official sources, the lowering of interest rates.'

      b.   La   flota   británica **habría   salido**   esta mañana del   Puerto de Portsmouth.
            The   fleet   British   have.Cond gone.out   this morning of.the harbor of P.
            '(Reportedly), the British Navy would have left the Portsmouth harbor this morning.'

(39)   La flotte britannique **aurait quitté** ce matin le port de Portsmouth.

Italian too appears to differ from Spanish. For Pietrandrea (2005), Italian futures cannot express judgments based on an inferential process, and modals must be used for this purpose, so there is a difference with Spanish. Nevertheless, Italian also differs from French in so far as it displays the construction with a high certainty labeled 'strong' mirative in this paper. Rocci (2000), however, doubts that such (traditional) concessives can be unified with epistemic futures.

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